

Amendment and Response

Applicant: Lung T. Tran et al.

Serial No.: 10/695,567

Filed: Oct. 28, 2003

Docket No.: 10017394-1

Title: MICROMOVER WITH MAGNETIC STORAGE MEDIUM

IN THE CLAIMS

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims:

1. (Currently amended) A storage device comprising:
a magnetic storage medium mounted in a first plane;
a write mechanism mounted in a second plane that is parallel to the first plane and configured to write information to the magnetic storage medium; and
a micromover configured to move the magnetic storage medium in a first direction parallel to the first plane and configured to move the magnetic storage medium in a second direction parallel to the first plane and perpendicular to the first direction;
wherein the magnetic storage medium comprises a perpendicular medium having a storage location, and wherein the write mechanism is configured to set an orientation of magnetization of the storage location in a third direction that is perpendicular to the first plane to cause the information to be written to the magnetic storage medium.
2. (Original) The storage device of claim 1 further comprising
a read mechanism mounted in the second plane.
3. (Original) The storage device of claim 2 wherein the read mechanism comprises a magnetoresistive sensor.
4. (Original) The storage device of claim 2 wherein the read mechanism comprises a giant magnetoresistive sensor.
5. (Original) The storage device of claim 2 wherein the read mechanism comprises a magnetic tunnel junction sensor.
- 6-8. (Canceled)

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9. (Currently amended) The storage device of claim 8-1 wherein the write mechanism comprises a write pole, a magnetic flux return pole, and a coil configured to produce magnetic flux in the write pole to set the orientation of magnetization of the storage location.

10. (Original) The storage device of claim 1 wherein the first plane is in close proximity to the second plane.

11. (Original) The storage device of claim 1 further comprising a cantilever coupled to the write mechanism.

12. (Currently amended) A storage device comprising:
a magnetic storage medium mounted in a first plane;
a plurality of read / write mechanisms mounted in a second plane that is parallel to the first plane, wherein each of the plurality of read / write mechanisms is configured to write information to the magnetic storage medium and read information from the magnetic storage medium; and

a micromover configured to move the magnetic storage medium in a first direction parallel to the first plane and configured to move the magnetic storage medium in a second direction parallel to the first plane and perpendicular to the first direction;

wherein the magnetic storage medium comprises a longitudinal medium having a plurality of storage locations, and wherein each of the plurality of read / write mechanisms is configured to set an orientation of magnetization of at least one of the plurality of storage locations in at least a third direction that is parallel to the first plane to write information to the magnetic storage medium.

13. (Original) The storage device of claim 10 wherein the plurality of read / write mechanisms are arranged in an array of rows and columns in the second plane.

14-15. (Canceled)

16. (Currently amended) A storage device comprising:

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a magnetic storage medium mounted in a first plane;

a means for writing information to the magnetic storage medium ~~mounted~~, the means mounted in a second plane that is parallel to the first plane; and

a micromover configured to move the magnetic storage medium in a first direction parallel to the first plane and configured to move the magnetic storage medium in a second direction parallel to the first plane and perpendicular to the first direction;

wherein the magnetic storage medium comprises a perpendicular medium having a storage location, and wherein the means for writing the information is for setting an orientation of magnetization of the storage location in a third direction that is perpendicular to the first plane to cause the information to be written to the magnetic storage medium.

17. (Original) The storage device of claim 16 further comprising
a read mechanism mounted in the second plane.

18. (Original) The storage device of claim 17 wherein the read mechanism comprises a magnetoresistive sensor.

19. (Original) The storage device of claim 17 wherein the read mechanism comprises a giant magnetoresistive sensor.

20. (Original) The storage device of claim 17 wherein the read mechanism comprises a magnetic tunnel junction sensor.

21. (Currently amended) A method comprising:

providing a magnetic storage medium mounted in a first plane;

providing a write mechanism mounted in a second plane that is parallel to the first plane and configured to write information to the magnetic storage medium; and

providing a micromover configured to move the magnetic storage medium in a first direction parallel to the first plane and configured to move the magnetic storage medium in a second direction parallel to the first plane and perpendicular to the first direction;

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wherein the magnetic storage medium comprises a longitudinal medium having a storage location, and wherein the write mechanism is configured to set an orientation of magnetization of the storage location in a third direction that is parallel to the first plane to write the information to the magnetic storage medium.

22. (Original) The method of claim 21 further comprising:
providing a read mechanism mounted in the second plane.

23-24. (Canceled)

25. (New) The storage device of claim 1 wherein the magnetic storage medium includes a data layer and a magnetically soft layer mounted on a substrate.

26. (New) The storage device of claim 12 wherein the magnetic storage medium includes a data layer mounted on a substrate.

27. (New) The storage device of claim 12 wherein each of the plurality of read / write mechanisms includes a coil winding and a plurality of poles configured to form a fringing field that is configured to set the orientation of magnetization of at least one of the plurality of storage locations in response to a current applied to the coil winding.

28. (New) The storage device of claim 16 wherein the means for writing the information includes a means for producing magnetic flux to set the orientation of magnetization of the storage location.

29. (New) The storage device of claim 16 wherein the magnetic storage medium includes a data layer and a magnetically soft layer mounted on a substrate.

30. (New) The method of claim 21 wherein the magnetic storage medium includes a data layer mounted on a substrate.

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31. (New) The method of claim 21 wherein the write mechanism includes a coil winding and a plurality of poles configured to form a fringing field that is configured to set the orientation of magnetization of the storage location in response to a current applied to the coil winding.